November 2003
FACT SHEET
Bureau of Indians Affairs (BIA) -Crystal Boarding School
NPDES Permit No. NM0020869

I. Introduction

The U.S. Bureau of Indians Affairs-Fort Defiance Navajo Agency ("BIA") was issued an NPDES Permit No. NM0020869 for the discharge from the BIA Crystal Boarding School sewage lagoon facility. The permit became effective on September 30, 1998 and expired on October 31, 2003. The facility is not considered a publicly-owned treatment works (POTW) because it is a federal facility. A draft application for continued coverage of the NPDES permit had been submitted to EPA on October 1, 2003.

Applicant Address: Navajo Regional Office
Bureau of Indians Affairs
U.S. Department of Interior
P.O. Box 1060
Gallup, New Mexico 87305

Applicant Contact: Jean Romancito, Environmental Protection Specialist
(505) 863-8330

Facility Address: BIA Crystal Boarding School
Mile Post 5, NM Hwy 134
Navajo, NM 87328

Facility Contact: Denny Ben, Facility Manager
(505) 777-2391

II. Background

The BIA-Crystal Boarding School WWTF is located in Crystal, San Juan County, New Mexico within the Navajo Nation. The facility serves a population of approximately 200 people, receiving only domestic sewage with a design flow of 0.015 million gallon per day ("MGD.") The facility consists of a septic tank connected to a one-cell lagoon equipped with two aerators. The wastewater from the collection system flows by gravity to the septic tank where primary settling occurs. From the septic tank, the wastewater flows into the lagoon for aeration and further settling where the wastewater seeps through a rockbed filter into Outfall 001. The facility discharges intermittently into Crystal Creek, a tributary to Whiskey Creek, a tributary to Wheatfields Creek, a tributary to Canyon De Chelly Wash, a tributary to Chinle Wash, an eventual tributary to San Juan River. The septic tank is pumped

annually by a commercial vender. Any sampling and monitoring under the proposed permit shall be performed at Outfall No. 001.

The Crystal lagoon system has not discharged for over three years, a condition which the BIA believes is attributable to local weather patterns suffering from a long-term drought in the region. Environmental Dimensions, Inc., a contractor hired by the BIA to prepare the permit application made two visits to the facility on September 12 and 25, 2003 and noted that there was no flow at the discharge nor in the receiving waters for several hundred yards downstream. The contractor also noted that one cell was approximately three-quarters full, with two aerators on the east and west sides of the cell. Cell 2 was wet but had no standing water. The contractor indicated that, according to the facility manager, Denny Ben, there has been no discharge in over three years. Improvements made to the facility during the period of previous permitting include piping repairs and removal of muck from Cell 1 which helped increasing its capacity to prolong contact time for complete oxidation and increase microbial growth.

EPA has determined that due to the quantity, frequency, type, and location of discharge, effluent released is accordance with this permit will have no adverse effect on threatened or endangered species in the area. No requirements specific to the protection of endangered species are proposed in the permit. A copy of the permit and fact sheet is being sent to the U.S. Fish and Wildlife Services for review during the public comment period.

III. Navajo Nation Surface Water Quality Standards

Pursuant to the Water Quality Act of 1987 and the "EPA Policy for the Administration of Environmental Programs on Indian Reservations" (November 8, 1987), EPA will work directly with Indian Tribal governments on a one-to-one basis. This conforms with the Federal Indian Policy of January 24, 1983. The Navajo Nation has received Treatment as a State ("TAS") for Section 106 of the Clean Water Act ("CWA".) They have applied but have not received TAS for the purposes of Section 303 of the CWA. Section 106 grant money was used to develop water quality standards and use designations, which must be approved under Section 303 by EPA Region 9. The Navajo Nation completed and adopted the Navajo Nation Surface Water Quality Standards ("NNSWQS") on September 7, 1999 and promulgated in November 1999. The NNSWQS, along with a TAS application under Section 303, was submitted to EPA in November 1999. A draft revision to the NNSWQS made on April 17, 2003 is awaiting review and approval by the Navajo Nation Council. In the interim until the NNSWQS are approved by EPA, those water quality standards will be used on a best professional judgment basis for purposes of developing water quality based effluent limitations.

IV. Basis of Proposed Permit Requirements

The proposed discharge limitations are based on:

A. Secondary Treatment Regulations contained in 40 CFR Part 133, Sections 133.101 through 133.105, promulgated September 20, 1984, and most recently amended on January 27, 1989. EPA used these regulations and its best professional judgment ("BPJ") to develop limits for this facility.

B. NNSWQS, which was promulgated by the Navajo Nation Council in November 1999.

V. Designated Uses of the Receiving Water

The designated uses of the receiving water (Chinle Creek/Chinle Wash, mouth to mouth of Canyon de Chelly, San Juan River) as defined by the Navajo Nation's surface water quality standards are primary and secondary human contact, agricultural water supply, ephemeral warm water habitat, and livestock and wildlife watering (Table 204.1, page 22.)

VI. Determination of Effluent Limitations, Monitoring, and Reporting Requirements

A. Flow Rates

Under the proposed permit, there is no flow limit but the monthly and daily maximum flows must be monitored and reported. The monitoring frequency is once/month. This is consistent with the previous permit.

B. Five-Day Biochemical Oxygen Demand (BOD_5)

Under the proposed permit, the discharge shall not exceed a monthly average of 45 mg/l and a weekly average of 65 mg/l. These limits are required under 40 CFR Sections 133.105(a) and 133.105(d). The limits are designated as 30-day and 7-day averages since the facility operates similarly to a POTW [40 CFR 122.45(d)]. These limits are the same as those in the previous permit.

Under 40 CFR Section 122.45(f), mass limits are required for BOD_5. Based upon the 0.015 MGD flow, the mass limits for BOD_5 are based on the following calculations:

Monthly average

$$\frac{0.015\ MG}{day} \times \frac{45\ mg}{l} \times \frac{8.345\ lb/MG}{1\ mg/l} \times \frac{0.45\ kg}{lb} = 2.5\ kg/day$$

Weekly average

$$\frac{0.015\ MG}{day} \times \frac{65\ mg}{l} \times \frac{8.345\ lb/MG}{1\ mg/l} \times \frac{0.45\ kg}{lb} = 3.7\ kg/day$$

These limits are identical to those in the previous permit. The monitoring frequency is once/month.

C. Total Suspended Solids (TSS)

Under the proposed permit, the discharge shall not exceed a weekly average of 135 mg/l and monthly average of 90 mg/l TSS, and shall achieve no less than a monthly average rate of 65% removal. These limitations ("Alternative State Requirements") are BPJ Technology-based limits and consistent with 40 CFR Part 133 Sections 103(c), and 105(b)(3) and (d). Mass limit requirements, in accordance with 40 CFR 122.45(f), have also been set in the proposed permit. Mass loadings are based upon the same calculation shown above for BOD_5 and shall not exceed a 7-day average of 7.7 kg/day and a 30-day average of 5.1 kg/day for TSS. The limits are identical to those in the previous permit. The monitoring frequency is once/month.

D. Fecal Coliform

In the proposed permit, the monthly logarithmic mean of fecal bacteria shall not exceed 100 cfu/100 ml, as a geometric mean calculation based on a minimum of five samples collected over a maximum of 30 days, and 200 cfu/100 ml as a single sample maximum. These limits are more stringent than those in the previous permit and are based on the Navajo Nation Surface Water Quality Standards for primary human contact (Table 206A.1, page 24.) The monitoring frequency is once/month.

E. Total Residual Chlorine (TRC)

The facility does not disinfect but limits are proposed in the event chlorination is ever used. If chlorination is used as part of the treatment process, the proposed permit requires a monthly TRC limit of 1.0 mg/l. This limit is based on Best Professional Judgment and should assure that the Navajo Nation Surface Water Quality Standards for protection of aquatic life (0.011 mg/l) is met in the receiving water when aquatic life is present (Table 206B.2, page 28.) The presence of aquatic life depends on natural background flows. Such background flows are only present during and after storm events. Consequently, at these times the discharges will undergo significant dilution. Furthermore, a large portion of the residual chlorine will volatilize. Nevertheless, the permittee should attempt to achieve the lowest possible residual chlorine level while still achieving the limits for fecal coliform. This limit is identical to that in the previous permit. The monitoring frequency is once/month. Sampling is to begin at the initiation of dechlorination.

F. Ammonia (as un-ionized NH_3)

The proposed permit establishes a monitoring requirement for ammonia.

The monitoring frequency is once/quarter. If analytical results for the first four quarters reveal ammonia levels are below the EPA's National Water Quality Criteria for ammonia, the monitoring frequency will decrease to once/year. The regulations at 40 CFR 122.44(i) allow requirements for monitoring as determined to be necessary. If analytical results for the first four quarters reveal ammonia levels are below for ammonia, the monitoring frequency will decrease to once/year.

G. Total Dissolved Solids (TDS)

The proposed permit requires monitoring and reporting of both the influent and effluent TDS, as in the previous permit. The monitored frequency is once/quarter. The regulations at 40 CFR 122.44(i) allow requirements for monitoring as determined to be necessary.

H. pH

The proposed permit requires that effluent pH not fall below 6.5 or above 9.0 standard pH units, consistent with the Navajo Nation surface water quality standards for ephemeral warm water habitat. The monitoring frequency is once/month.

I. Temperature

The proposed permit establishes a monitoring requirement for temperature. The monitoring frequency is once/quarter.

VII. Reporting

The proposed permit requires discharge data obtained during the previous three months to be summarized and reported monthly. If there is no discharge for the month, indicate "Zero Discharge." These reports are due January 28, April 28, July 28, and October 28 of each year. Duplicate signed copies of these, and all other reports required herein, shall be submitted to the Regional Administrator and the Navajo Nation EPA.

VIII. General Standards

The proposed permit sets general standards that are narrative water quality standards contained in the Section 203 of the NNSWQS. These general standards are set forth in Section B ("General Discharge Specifications") of the permit.

IX. Permit Reopener

At this time, there is no reasonable potential to establish any other water quality-based limits. Should any monitoring indicate that the discharge causes, has the reasonable potential to cause, or contributes to excursions above water quality criteria, the permit may be reopened for the imposition of water quality-based limits and/or whole effluent toxicity limits. The proposed permit may be modified, in accordance with the requirements set forth at 40 CFR 122.44 and 124.14, to include appropriate conditions or limits to address demonstrated effluent toxicity based on newly available information, or to implement any EPA-approved new Tribal water quality standards.

X. Biosolids Requirements

The permittee shall submit a report 60 days prior to disposal of biosolids. The report shall discuss the quantity of biosolids produced, the treatment applied to biosolids including process parameters, disposal methods, and, if land applied, analyses for Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Molybdenum, Nickel, Zinc, and Selenium, and for organic-N, ammonium-N, and

nitrate-N, all expressed in mg/kg biosolids on a 100% dry weight basis. The permittee shall comply with all standards for biosolids use and disposal of Section 405(d) of the CWA, and 40 CFR Parts 257, 258 and 503.

XI. Endangered Species Act

EPA has determined that discharge in compliance with this permit will have no effect on threatened or endangered species.

XII. Written Comments

Persons who wish to comment upon, object to the proposed action, or request a public hearing pursuant to 40 CFR Section 124.11 should submit their comments and requests in writing within thirty (30) days from the date of the Public Notice, either in person or by mail to:

U.S. Environmental Protection Agency, Region IX
CWA Standards and Permits Office (WTR-5)
Attn: Linh Tran
75 Hawthorne Street
San Francisco, CA 94105
Telephone: (415) 972-3511

XIII. Information and Copying

The Administrative Record, which contains the draft NPDES permit, the fact sheet, comments received, and other relevant documents, is available for review and may be obtained by calling or writing to the above address.

All comments or objections received within thirty (30) days from the date of the Public Notice, will be retained and considered in the formulation of the final determination regarding the permit issuance.

XIV. Public Hearing

When public interest warrants, the Regional Administrator shall hold a public hearing and such notice of hearing shall be issued by public notice at least thirty (30) days prior to the hearing date. A request for a public hearing must be in writing and must also state the nature of the issue proposed to be raised in the hearing.